

Fig.1

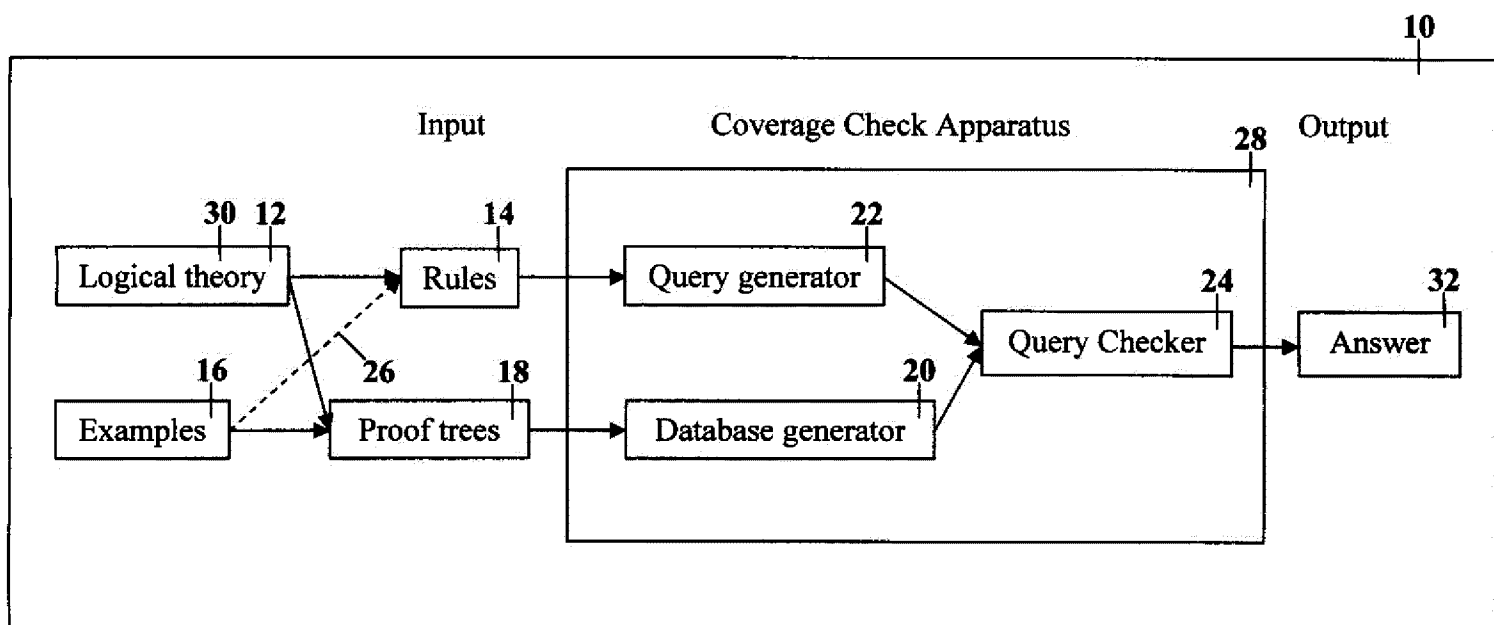


Fig.2

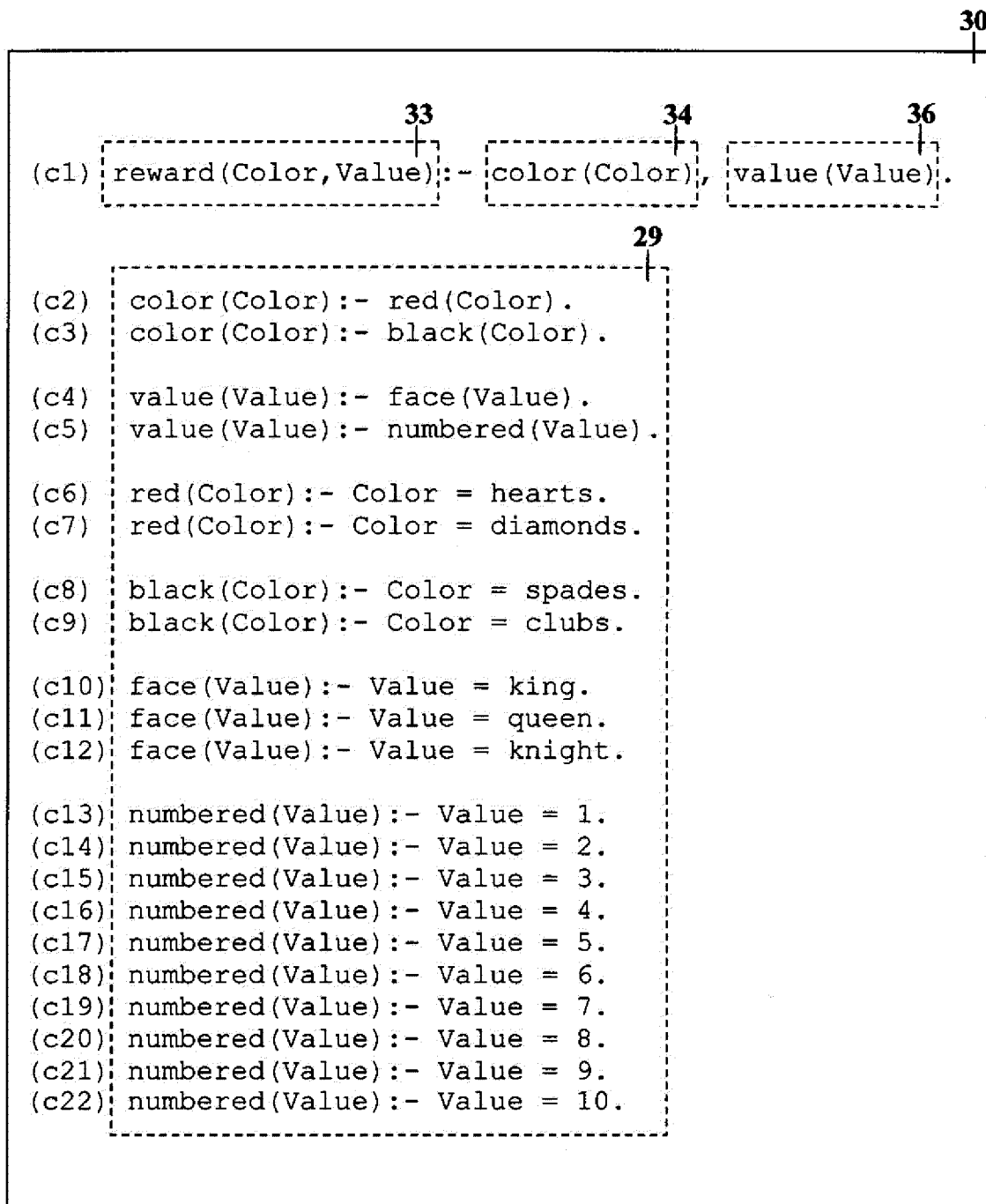


Fig.3

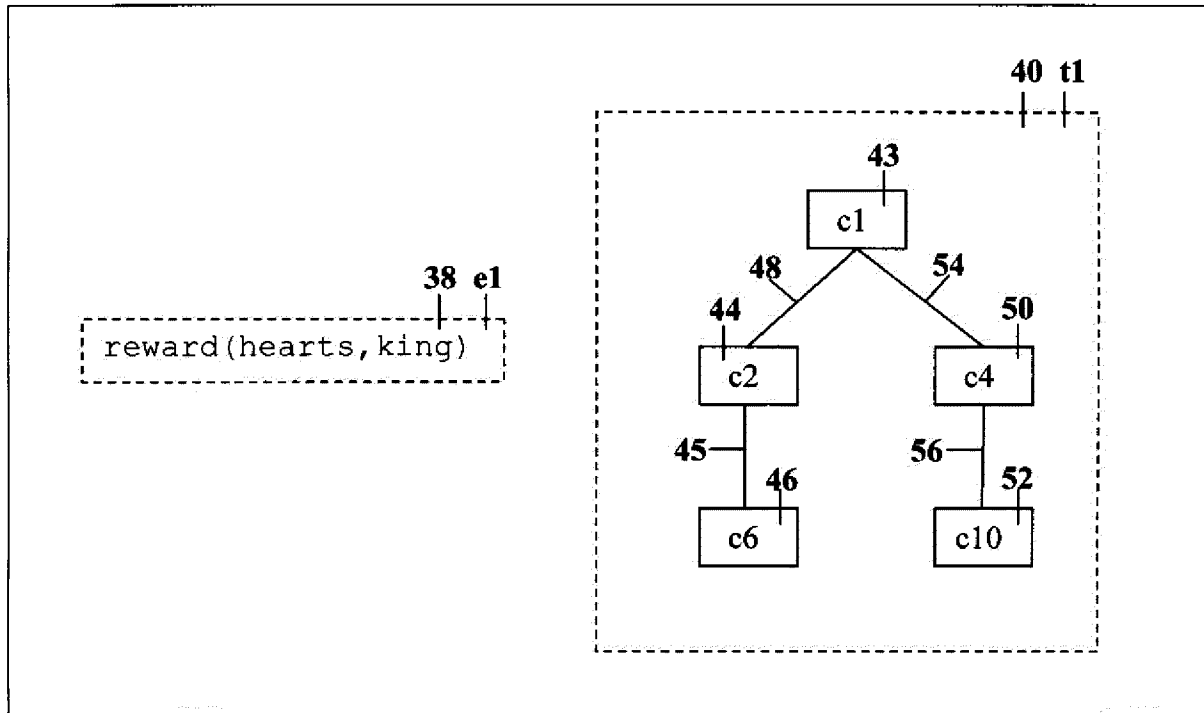


Fig.4

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Input:

- an example label  $e$ ,
- a proof tree  $T$ ,
- proof tree label  $t$ ,
- a set of database tables  $D$

Output:

- a set of database tables  $D$

For each sequence  $n_0, \dots, n_k$  in the tree  $T$ , where  $n_0$  is the root of  $T$  and  $n_{i+1}$  is a child of  $n_i$  in  $T$ , for all  $0 \leq i < k$ , do

Let  $n$  be a table name obtained by a function from the sequence of pairs  $(c_0, l), (c_1, s_1), \dots, (c_k, s_k)$ , where  $c_i$  is the clause used in node  $n_i$ , for  $0 \leq i \leq k$  and where  $s_i$  is the  $s_i$ -th child of  $n_{i-1}$ , for  $0 < i \leq k$ .

If there is no table named  $n$  in  $D$ , create such a table with name  $n$  and two fields, Example and Tree, and add the table to  $D$ .

Add the tuple Example =  $e$  and Tree =  $t$  to the table named  $n$ .

Fig.5

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Table c1 42a

Example	Tree
e1	t1

Table c1 1 c2 42b

Example	Tree
e1	t1

Table c1 1 c2 1 c6 42c

Example	Tree
e1	t1

Table c1 2 c4 42d

Example	Tree
e1	t1

Table c1 2 c4 1 c10 42e

Example	Tree
e1	t1

Fig.6

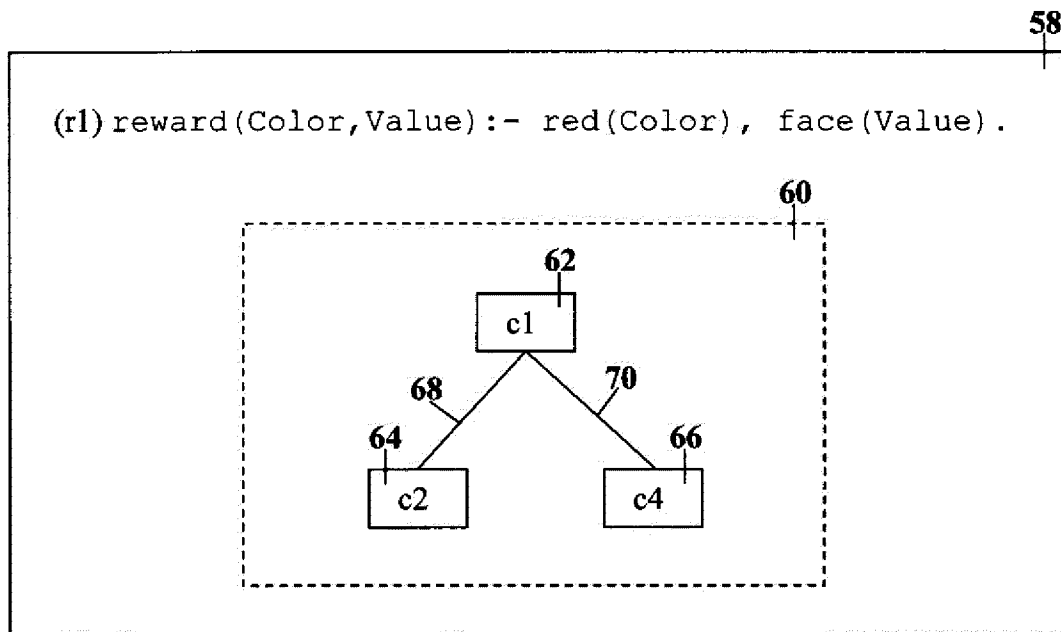


Fig. 7

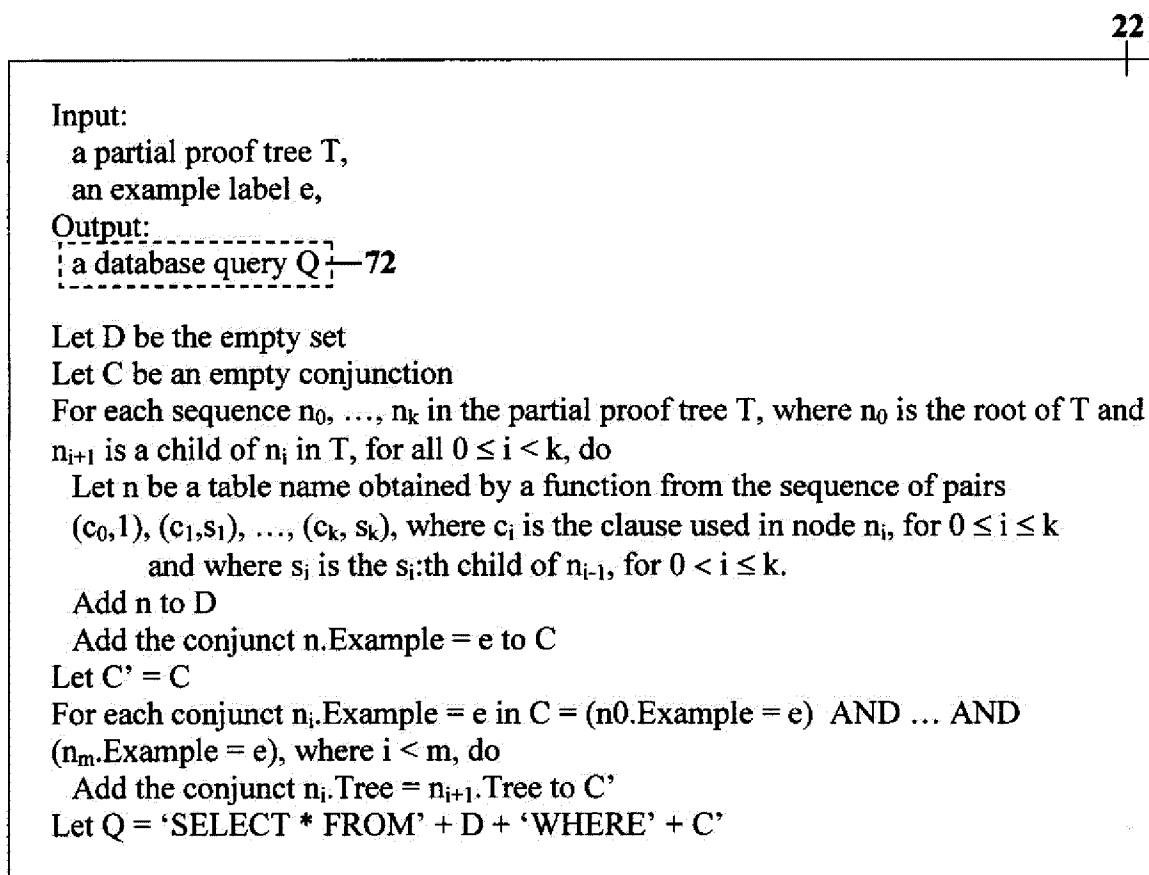


Fig. 8

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SELECT \*

FROM c1\_1\_c2, c1\_2\_c4 —74

WHERE c1\_1\_c2.Example = 'e1' —76

AND c1\_2\_c4.Example = 'e1' —80

AND c1\_1\_c2.Tree = c1\_2\_c4.Tree —82

Fig.9

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Table c1 78a

Example
e1

Table c1\_1\_c2 78b

Example
e1

Table c1\_1\_c2\_1\_c6 78c

Example
e1

Table c1\_2\_c4 78d

Example
e1

Table c1\_2\_c4\_1\_c10 78e

Example
e1

Fig. 10

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```
SELECT *  
FROM c1_1_c2, c1_2_c4  
WHERE c1_1_c2.Example = 'e1'  
AND c1_2_c4.Example = 'e1'
```

Fig. 11

86

```
(s1) [reward(Weight, Length)]:-  
      [split_number(Weight)],  
      [split_number(Length)].
```

85  
87  
89



Fig. 12

88

```
(r2) reward(Weight,Length):-  
    Weight > 3,  
    split_number(Weight),  
    Length =< 8.2,  
    split_number(Length).
```

Fig 13.

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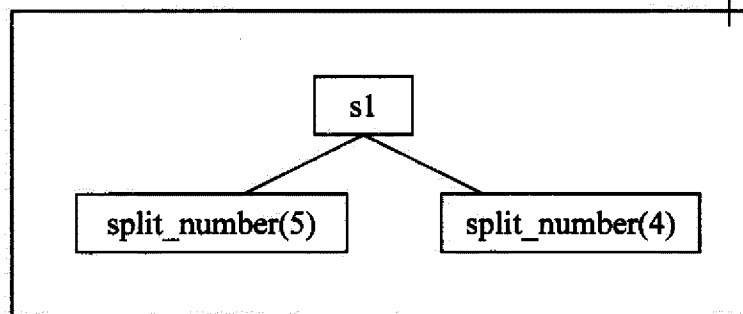


Fig. 14

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Table s1

Example	Tree
e2	t2

Table s1\_1

Example	Tree	split_number
e2	t2	5

Table s1\_2

Example	Tree	split_number
e2	t2	4

Fig. 15

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```

SELECT *
FROM s1_1, s1_2
WHERE s1_1.Example = 'e2'
AND s1_1.split_number > 3
AND s1_2.Example = 'e2'
AND s1_2.split_number <= 8.2
AND s1_1_c2.Tree = c1_2_c4.Tree

```